

## CLAIMS

1. A system for assisting regeneration of a particle filter integrated in an exhaust line (3) of a motor vehicle diesel engine (1), the engine (1) being associated with various units, including:
  - means (2) for admitting air into the engine;
  - means (4) for recycling exhaust gases from the engine to the inlet thereof;
  - a turbocompressor (5);
  - a particle filter (7);
  - a common system (8) for feeding fuel to the cylinders of the engine, including electrical fuel injectors (9, 10, 11, 12) associated with those cylinders;
  - means (16) for adding to the fuel an additive adapted to be deposited on the particle filter (7) to reduce the combustion temperature of particles trapped therein;
  - means (20, 21, 22) for acquiring information relating to various operating parameters of the engine and the units associated therewith; and
  - means (17) for monitoring the operation of the air admission means, the recycling means, the turbocompressor and/or the fuel feeding system in order to monitor the operation of the engine, these monitoring means being further adapted to trigger a phase of regeneration of the particle filter (7) by combustion of the particles trapped therein by triggering a phase of multiple injection of fuel into the cylinders of the engine during their expansion phase;
- 35 the system being characterized in that the particle filter (7) is impregnated with a catalyst for oxidizing hydrocarbons and CO present in the exhaust gases flowing through said particle filter.
2. A system according to claim 1, characterized in that said catalyst is a metal or a mixture of metals.

3. A system according to claim 2, characterized in that said metal is a group VIII metal, such as platinum, palladium, or rhodium, or a mixture of such metals.

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4. A system according to any one of claims 1 to 3, characterized in that the particle filter (7) has a region (27) that is more strongly impregnated with the oxidation catalyst.

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5. A system according to claim 4, characterized in that said more strongly impregnated region is situated at the centre of the cross-section of the particle filter (7).

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6. A system according to claim 4 or claim 5, characterized in that said more strongly impregnated region is situated at the inlet of the particle filter (7).

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7. A system according to claim 5 or claim 6, characterized in that the area of said more strongly impregnated region (27) represents from 20% to 70% of the cross-section of said particle filter (7).

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8. A system according to any one of claims 4 to 7, characterized in that the more strongly impregnated region (27) occupies from 10% to 50% of the length of the particle filter (7) starting from its inlet face (28).

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9. A system according to any one of claims 2 to 8, characterized in that the terminal portion (31) of the particle filter (7) is not impregnated with the oxidation catalyst.